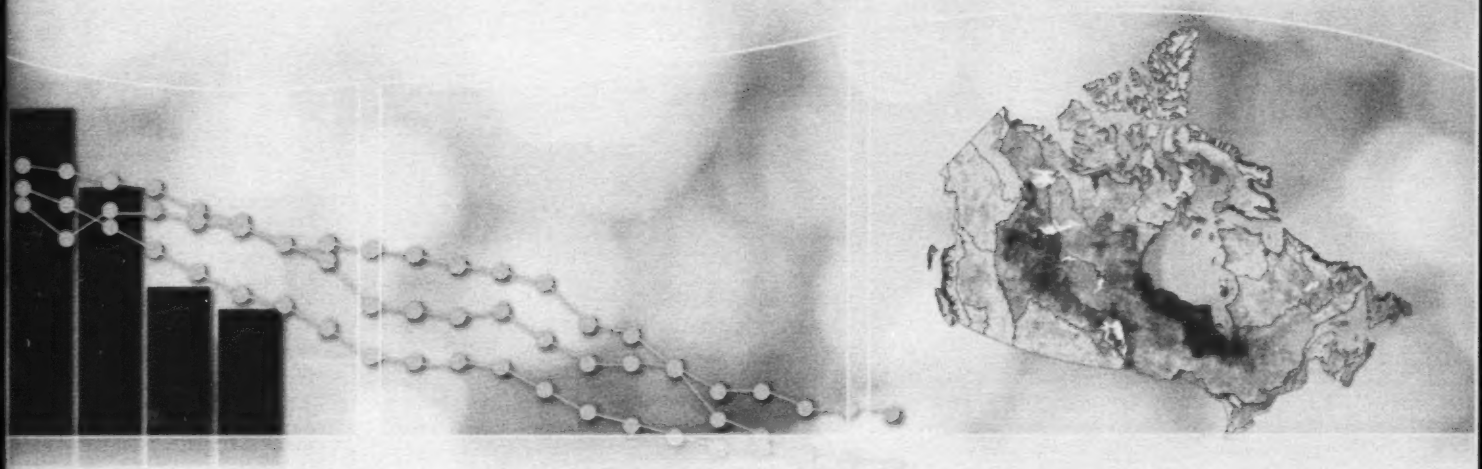
Environment and Climate Change Canada
Environnement et Changement climatique Canada

Canadian Environmental Sustainability Indicators

Changes in the status of wildlife species at risk



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Canadian Environmental Sustainability Indicators

Changes in the status of wildlife species at risk

June 2018

Table of Contents

Changes in the status of wildlife species at risk **5**

Key results 5

Recent changes in the status of wildlife species at risk, by risk level 6

About the indicator 7

What the indicator measures 7

Why this indicator is important 7

Related indicators 7

Data sources and methods 8

Data sources 8

Methods 8

Recent changes 10

Caveats and limitations 10

Resources 11

References 11

Annex **12**

Annex A. Data tables for the figures presented in this document 12

List of Figures

Figure 1. Changes in risk of disappearance of wildlife species from Canada, May 2017 5
Figure 2. Recent changes in the status of wildlife species at risk 6

List of Tables

Table 1. Number of species by status category, Canada, 2017 8
Table 2. Relationship between change status and indicator category 9
Table A.1. Data for Figure 1. Changes in risk of disappearance of wildlife species from Canada, May 2017 12
Table A.2. Data for Figure 2. Changes in wildlife species designations, by designation, Canada, May 2017[A] 13

Changes in the status of wildlife species at risk

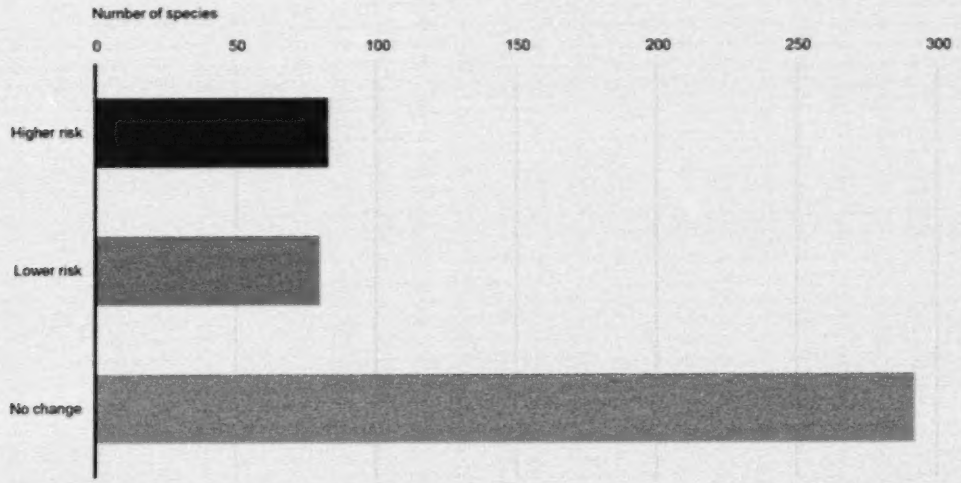
Wildlife species are essential to the integrity of ecosystems. However, some wildlife species are at risk of disappearing from Canada. Wildlife species that are thought to be at risk are periodically assessed. Changes in status over time may help determine whether conditions for these wildlife species are improving.

Key results

Of the 455 wildlife species for which sufficient data are available to determine if there has been a change in status:

- 83 wildlife species (18%) are now in a higher risk category
- 80 wildlife species (18%) are now in a lower risk category
- 292 wildlife species (65%) show no change in status

Figure 1. Changes in risk of disappearance of wildlife species from Canada, May 2017



Data for Figure 1

Note: In this analysis, wildlife species refers to a species, subspecies or a genetically or geographically distinct population. Wildlife species disappearance may refer to extinction or extirpation (an extirpated species no longer occurs in the wild in Canada).
Source: Committee on the Status of Endangered Wildlife in Canada, May 2017.

To prevent the disappearance of wildlife species at risk from Canada, monitoring and sometimes conservation actions are required. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses wildlife species that may be at risk and places them in a risk category. If conservation actions are effective, the risk level of wildlife species will decrease over time. Nonetheless, depending on the life cycle of the wildlife species and the condition of its habitat, recovery may take many decades. In addition, some wildlife species are naturally rare in Canada, and these wildlife species are expected to remain at some level of risk.

Changes in risk level can be a result of improved information rather than actual changes in the condition of the wildlife species. This is more likely to occur for wildlife species that have improved in status than for wildlife species that have declined.

Recent changes in the status of wildlife species at risk, by risk level

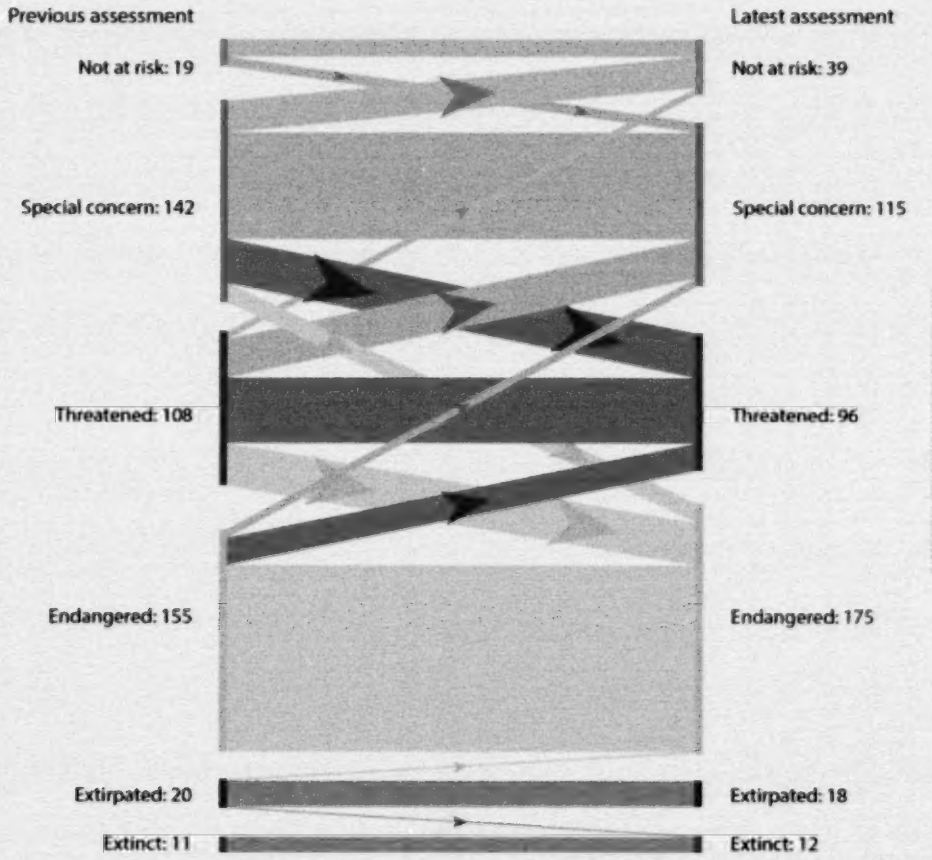
Most wildlife species remain in the same category when they are reassessed. The changes that are observed most often occur between neighbouring categories.

Of the 155 wildlife species ranked as endangered (a wildlife species facing imminent extirpation or extinction) in the previous assessment:

- the majority (130 wildlife species or 84%) remained in that status category
- the remaining 25 wildlife species changed to a lower risk category

One extirpated species, the Striped Bass, St. Lawrence River population, was re-introduced and is now considered endangered. Another wildlife species, the Atlantic salmon, Lake Ontario population, was last reported in 1898; it was previously classified as extirpated and is now recognized as extinct.

Figure 2. Recent changes in the status of wildlife species at risk



Data for Figure 2

Note: The chart shows the change between the 2 most recent assessments for 455 species. The assessments are from various years up to 2017. Eight (8) species have moved to or from the Data deficient category and are not included here.
Source: Committee on the Status of Endangered Wildlife in Canada, May 2017.

About the indicator

What the indicator measures

The Changes in the status of wildlife species at risk indicator reports on changes in wildlife species designations for wildlife species assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The committee is composed of independent experts who determine the national status of Canadian wildlife species, subspecies, varieties or other designatable units that are suspected of being at risk of extinction or extirpation.

Why this indicator is important

Recognition that a wildlife species is at risk of extinction or extirpation can focus management action. Successful management should reduce the risk of species extinction or extirpation. The conservation of wildlife species at risk is a key component of the Canadian Biodiversity Strategy, which aims to conserve biological diversity in Canada.[1] The conservation of such wildlife species is also the goal of the Species at Risk Act, which provides legal protection to prevent the extinction of wildlife species and secure the necessary actions for their recovery.[2]

Ecosystems are composed of a variety of animals, plants and other organisms, each of which performs a specialized role. This diversity of life supports vital ecological processes and provides a wide range of resources known as ecological goods and services, such as oxygen production and water purification.[3] The loss of species has detrimental impacts on ecosystems and the goods and services they provide.

Related indicators

The Species at risk population trends indicator tracks trends for wildlife species at risk that are listed under the Species at Risk Act. Not all wildlife species designated by Committee on the Status of Endangered Wildlife in Canada (COSEWIC) are listed under the Species at Risk Act.

The Status of wild species indicator reports on extinction risks across a broad set of species. The ranking system used in that indicator is not the same as the one used here.

Healthy wildlife populations

This indicator supports the measurement of progress towards the following 2016–2019 Federal Sustainable Development Strategy long-term goal: All species have healthy and viable populations.

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[1] Government of Canada (2014) Accord for the Protection of Species at Risk. Retrieved on May 24, 2017.

[2] Government of Canada (2016) Species at Risk Act. Retrieved on May 24, 2017.

[3] Government of Canada (2014) Canadian Biodiversity Strategy. Retrieved on May 24, 2017.

Data sources and methods

Data sources

Data are from the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) database on wildlife species at risk. Individual wildlife species status reports are available in the Species at Risk Public Registry.

More information

The committee meets twice a year to consider wildlife species reports, assess wildlife species' risk of extinction or extirpation, and designate a status category. The COSEWIC Secretariat maintains a database of the assessment results, which were summarized for this indicator. Documents related to wildlife species of interest can be found on the Species at Risk Public Registry. In general, wildlife species are reassessed every 10 years. The date of reassessment therefore varies widely within the dataset.

Wildlife species are assigned to one of 7 status categories: Extinct, Extirpated, Endangered, Threatened, Special Concern, Not at Risk or Data Deficient. As of May 2017, a total of 995 wildlife species had been assigned a status.

Table 1. Number of species by status category, Canada, 2017

Status	Number of species
Extinct	16
Extirpated	23
Endangered	321
Threatened	172
Special Concern	219
Not at Risk	186
Data Deficient	58
Total	**995**

Wildlife species are also assigned a status change based on their previous status. The Changes in the status of wildlife species at risk indicator uses the set of wildlife species that have been reassessed by COSEWIC and have not been designated as Data Deficient in either of the last 2 assessments (455 species).

Methods

The indicator is a tabulation of status changes between the 2 most recent assessments for each species.

More information

Wildlife species assessment

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is a committee of independent experts that assesses wildlife species that may be at risk of disappearing from Canada.

The assessment process is divided into 3 sequential steps:

1. selection of wildlife species requiring assessment to create the prioritized Candidate Wildlife Species List
2. compilation of available data, knowledge and information to produce status reports

3. assessment of a wildlife species' risk of extinction or extirpation and corresponding designation (status category)

In general, wildlife species are reassessed every 10 years. If information received suggests that a species should be reassessed sooner, COSEWIC may do so.

Indicator calculation

In its assessments, COSEWIC notes a status change. Wildlife species that have been assessed only once are given the change status of New. For reassessed wildlife species, there are 6 possible change status categories: No change, In a higher risk category, In a lower risk category, No longer at risk, Changed, and Reassigned. The change status for reassessed species is based on the 2 most recent assessments.

The indicator includes wildlife species that have been reassessed and for which it is possible to assess the change in risk. Therefore, of the 995 wildlife species with an assigned status, the indicator excludes 540 species:

- wildlife species that have been assessed only once and have a change status designation of New (427 species)
- wildlife species that are Data Deficient in either assessment and have a change status designation of Changed (21 species)
- wildlife species with a status change designation of Reassigned (88 species), which is used in cases where the unit being assessed has changed based on new information, for example a species that is split into subspecies or geographical units
- wildlife species that are Data Deficient in both recent assessments, which are assigned a change status designation of No change by COSEWIC (4 species)

Table 2. Relationship between change status and indicator category

Committee on the Status of Endangered Wildlife in Canada change status	Definition	Changes in wildlife species' disappearance risk category
New	Wildlife species examined for the first time	Excluded from the indicator
Changed	Wildlife species moved to the Data Deficient category from a risk category or to a risk category from the Data Deficient category	Excluded from the indicator
No change	Wildlife species stays in the same category after reassessment	No change[A]
In a higher risk category	Wildlife species placed in a higher risk category after reassessment	Higher risk
In a lower risk category	Wildlife species placed in a lower risk category after reassessment	Lower risk
No longer at risk	Wildlife species moved to the Not at Risk category from a risk category	Lower risk
Reassigned	Wildlife species that has been assigned to a different designatable unit	Excluded from the indicator

Note: [A] Wildlife species that are Data Deficient on both dates when an assessment was made are excluded from the indicator.

Recent changes

The indicator is current as of May 2017.

In previous reports, Reassigned wildlife species were examined individually. If a change category could be assigned to a reporting unit, the unit was included in the indicator. While this approach ensured completeness of reporting, most Reassigned species could not be assigned to a change category. Furthermore, the inclusion of these wildlife species did not change the overall results. In 2016 for example, 83 wildlife species with a status change of Reassigned were grouped into 41 units whose status could be examined and 12 were added to the indicator: 6 were assigned to the No change category, 3 to Lower risk and 3 to Higher risk. For this reason, and to increase coherence between reports based on Committee on the Status of Endangered Wildlife in Canada data, Reassigned species are no longer included in the indicator.

Caveats and limitations

Wildlife species may take a long time to recover, and some wildlife species are naturally rare in Canada. A change in status may occur only after significant biological change has been detected. For these reasons, relatively few wildlife species should be expected to show changes in risk level when reassessed. Nonetheless, if management efforts are successful, we should expect to see more improvements than declines over time.

More information

Changes in risk level can be a result of improved information rather than actual changes in the condition of the wildlife species. Many wildlife species that show decreased risk are reclassified due to new information, rather than biological change. Changes in knowledge often involve the detection of additional populations, with the result that wildlife species are less at risk of extinction than previously believed. Changes due to new knowledge can happen quickly, while biological increases need time.

Some wildlife species may change risk level due to changes in the interpretation of the assessment criteria.

Wildlife species that are naturally rare may be considered to be at risk because they are more vulnerable to threats. The lack of change for these wildlife species should not be considered a conservation failure.

Knowledge of which wildlife species may be at risk is far from complete, and only a portion of those suspected to be at risk can be assessed. The Committee on the Status of Endangered Wildlife in Canada prioritizes assessments based on expert opinion. Early efforts focused mainly on vertebrates and plants, which are also the better-known wildlife species. As a result, these wildlife species are over-represented among those that have been reassessed. Similarly, more knowledge has been gathered on wildlife species in southern Canada and in terrestrial habitats.

Wildlife species that are at risk can take a long time to recover, especially if they are long-lived and slow to reproduce. Also, in some cases, recovery depends on improvements to habitat which may take many decades.

Resources

References

Government of Canada (2017) Committee on the Status of Endangered Wildlife in Canada. **Retrieved on May 24, 2017.**

Government of Canada (2017) Species at Risk Public Registry. **Retrieved on May 24, 2017.**

International Union for Conservation of Nature (2017) The IUCN Red List of Threatened Species. **Retrieved on May 24, 2017.**

National General Status Working Group (2015) Wild Species Reports. **Retrieved in on May 24, 2017.**

Annex

Annex A. Data tables for the figures presented in this document

Table A.1. Data for Figure 1. Changes in risk of disappearance of wildlife species from Canada, May 2017

Wildlife species group	Higher risk (number of species)	No change (number of species)	Lower risk (number of species)
Amphibians	2	12	1
Arthropods	4	17	2
Birds	13	48	11
Fishes (freshwater)	12	44	9
Fishes (marine)	5	8	6
Lichens	1	6	2
Mammals (marine)	7	20	3
Mammals (terrestrial)	3	26	7
Molluscs	2	17	6
Mosses	0	10	2
Reptiles	8	21	3
Vascular plants	26	63	28
Total	**83**	**292**	**80**

Note: In this analysis, wildlife species refers to a species, subspecies or a genetically or geographically distinct population. Wildlife species disappearance may refer to extinction or extirpation (an extirpated species no longer occurs in the wild in Canada).
Source: Committee on the Status of Endangered Wildlife in Canada, May 2017.

Table A.2. Data for Figure 2. Recent changes in the status of wildlife species at risk[A]

	Extinct, latest assessment (number of species)	Extirpated, latest assessment (number of species)	Endangered, latest assessment (number of species)	Threatened, latest assessment (number of species)	Special concern, latest assessment (number of species)	Not at risk, latest assessment (number of species)	Total, previous assessment (number of species)
Extinct, previous assessment	11	0	0	0	0	0	**11**
Extirpated, previous assessment	1	18	1	0	0	0	**20**
Endangered, previous assessment	0	0	130	19	6	0	**155**
Threatened, previous assessment	0	0	30	46	27	5	**108**
Special concern, previous assessment	0	0	14	31	75	22	**142**
Not at risk, previous assessment	0	0	0	0	7	12	**19**
Total, latest assessment	**12**	**18**	**175**	**96**	**115**	**39**	**455**

Note: [A] Eight (8) species have moved to or from the Data deficient category and are not included here. The assessments are from various years up to 2017.
Source: Committee on the Status of Endangered Wildlife in Canada, May 2017.

Additional information can be obtained at:

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